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ABSTRACT

This is a bibliography of 81 papers and books published in the years 1957-1970 relevant to the subject of verbally-elicited responses that are in accordance with principles of classical conditioning. Of these publications, 24 are by Staats--one of the bibliographers--and his associates. (MF)

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Classical Conditioning of Emotional Responses (Meaning, Attitudes, Values, Interests) and Effects on Social Behavior: A Bibliography

Arthur W. Staats and Carl G. Carlson

Technical Report Number 5

April 1970

PRINCIPAL INVESTIGATOR:
ARTHUR W. STAATS

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University of Hawaii

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ABSTRACT

In 1955 Staats began experimental development of the hypothesis that words as conditioned stimuli come to elicit responses according to the principles of classical conditioning. Emotional responses-- or evaluative responses, evaluative meaning, attitudes, values and so on--constitute an important type of response that can be classically conditioned to words. Many stimuli elicit emotional responses and the words that are contiguously paired with those stimuli also come to elicit an emotional response. Moreover, once a word comes to elicit an emotional response the word can serve to condition emotionality to any other stimulus with which it is paired. Many words have this function, and the processes involved constitute one of the powerful functions of language. Extensions of these principles have significance for many areas of psychology.

Following this analysis, Staats formulated a long-term project that included a series of studies to investigate both first-order classical conditioning of emotional responses as well as higher-order conditioning of responses to words. This series was first supported by the Office of Naval Research under Contract Nonr-2305 (00), and continued under Contract Nonr-2794 (02).

Following this formulation a number of experiments were conducted by Staats and his associates that showed that emotional responses could be conditioned to words and that many words in our language elicit emotional responses that could be conditioned to other stimuli. This line of research has been elaborated by a number of other investigators, and it has been criticized and supported by other studies. Staats has also developed the learning theory involved and extended it to various areas of study (1961, 1963, 1964a, 1964b, 1964c, 1964d, 1966, 1967, 1968a, 1968b). The theory and the various studies constitute a framework within which to consider significant aspects of human behavior. The present bibliography thus lists the various experimental studies and theoretical analyses to April of 1970. (Additional

extensions into social interaction and attraction have been made by Byrne and Lott and Lott. Studies not involving classical conditioning manipulations have not been included herein, however.)

BIBLIOGRAPHY

Abell, A.T. Words functioning simultaneously as operant and respondent reinforcers: Preliminary study. Psychological Reports, 1969, 24, 123-133. (a)

Abell, A.T. Words functioning simultaneously as operant and respondent reinforcers: Replication. Psychological Reports, 1969, 25, 974. (b)

Abell, A.T. A test of reinforcer forms with flaps. Perceptual and Motor Skills, 1969, 29, 984-986. (c)

Brewer, B.A. and Gross, M.C. Conditioning of attitudes using a backward conditioning paradigm. Technical Report No. 3, University of Hawaii, Office of Naval Research Contract N 000 14-67-A-0387-0007, September, 1969.

Brotsky, S.J. Classical conditioning of the galvanic skin response to verbal concepts. Journal of Experimental Psychology, 1968, 76, 244-253.

Bugelski, B.R. and Hersen, M. Conditioning acceptance or rejection of information. Journal of Experimental Psychology, 1966, 71, 619-623.

Carriero, N.J. The conditioning of negative attitudes to unfamiliar items of information. Journal of Verbal Learning and Verbal Behavior, 1967, 6, 128-135.

Cohen, B.H. Role of awareness in meaning established by classical conditioning. Journal of Experimental Psychology, 1964, 67, 372-378.

Coleman, D.E. The classical conditioning of attitudes toward selected educational concepts. Dissertation Abstracts, 1967, 27, 4125.

Coles, G.J. and Leonard, T.B., III. Conditioned word meaning and the inter-stimulus interval. Psychonomic Science, 1969, 14, 60-61.

Costello, C.G. Extraversion, neuroticism and the classical conditioning of word meaning. Psychonomic Science, 1967, 8, 307-308.

Das, J.P. and Nanda, P.C. Mediated transfer of attitudes. Journal of Abnormal and Social Psychology, 1963, 66, 12-16.

Di Vesta, F.J. Contrast effects in the verbal conditioning of meaning. Journal of Experimental Psychology, 1961, 62, 535-544.

Di Vesta, F.J. and Stover, D.O. The semantic mediation of evaluative meaning. Journal of Experimental Psychology, 1962, 64, 467-475.

Early, C.J. Attitude learning in children. Journal of Educational Psychology, 1968, 59, 176-180.

Ertel, S., Oldenberg, E., Siry, U., and Vormfelde, D. Classical conditioning of connotative meanings. Paper presented at the Conference on Human Learning with International Participation, Prague, Czechoslovakia, July 15-19, 1969.

Finley, J.R., and Staats, A.W. Evaluative meaning words as reinforcing stimuli. Journal of Verbal Learning and Verbal Behavior, 1967, 6, 193-197.

Franks, C.M. and Mantell, D. Introversion-extraversion and the verbal conditioning and generalization of meaning responses to nonsense syllables in normal and alcoholic subjects. British Journal of Social and Clinical Psychology, 1966, 5, 299-305.

Freeman, N.C.G. and Suedfeld, P. Classical conditioning of verbal meaning: The roles of awareness, meaningfulness, and evaluative loading. Psychological Record, 1969, 19, 335-338.

Geer, J.H. A test of the classical conditioning model of emotion: The use of non-painful aversive stimuli as unconditioned stimuli in a conditioning procedure. Journal of Personality and Social Psychology, 1968, 10, 148-156.

Gerstein, A.I. The effect of reinforcement schedules on meaning generalization and on awareness of the purpose of the experiment. Journal of Personality and Social Psychology, 1961, 29, 350-362.

Gross, M.C. and Staats, A.W. Interest inventory items as attitude eliciting stimuli in classical conditioning: A test of the A-R-D theory. Technical Report No. 4. University of Hawaii, Office of Naval Research Contract N 000 14-67-A-0387-0007, September, 1969.

Hall, G.F. Association of neutral objects with rewards: Persistence of effect upon verbal evaluation. Journal of Verbal Learning and Verbal Behavior, 1967, 6, 291-294.

Harbin, S.P. and Williams, J.E. Conditioning of color connotations. Perceptual and Motor Skills, 1966, 22, 217-218.

Hare, R.D. Cognitive factors in transfer of meaning. Psychological Reports, 1964, 15, 199-206.

Hare, R.D. Replication report: Cognitive factors in transfer of meaning. Psychological Reports, 1965, 17, 590.

Heise, D.R. Affectual dynamics in simple sentences. Journal of Personality and Social Psychology, 1969, 11, 204-213.

Insko, C.A. and Oakes, W.F. Awareness and the conditioning of attitudes. Journal of Personality and Social Psychology, 1966, 4, 487-496.

LeNy, J.F. Conditioning of meaning, semantic generalization and evaluative ratings in a complex situation. Journal of Verbal Learning and Verbal Behavior, 1966, 5, 268-274.

Maltzman, I., Raskin, P.C., Gould, J. and Johnson, O. Individual differences in the orienting reflex and semantic conditioning and generalization under different UCS intensities. Paper presented at Western Psychological Association, Honolulu, Hawaii, 1965.

Miller, A.W., Jr. Conditioning connotative meaning. Journal of General Psychology, 1966, 75, 319-328. (a)

Miller, A.W., Jr. Relationships of awareness to verbal learning efficiency and meaning change. Psychological Reports, 1966, 19, 875-883. (b)

Miller, A.W., Jr. Awareness, verbal conditioning, and meaning conditioning. Psychological Reports, 1967, 21, 681-691.

Miller, A.W., Jr. Meaning change and personality structure. Journal of General Psychology, 1968, 79, 271-277.

Miller, A.W., Jr. and Barsness, W.D. Extinction, stimulus generalization and partial reinforcement for higher-order meaning conditioning. Psychological Reports, 1969, 24, 288-290.

Miller, A. and Clark, N. Counter conditioning, neutral conditioning, and extinction effects for the meaning of nonsense syllables. Psychonomic Science, 1969, 16, 297-298.

Miller, A., Gimpl, M., and McCrimmon, R. Extinction versus counterconditioning for the meaning of words and nonsense syllables. Psychonomic Science, 1969, 15, 92-93.

Miller, A. and Kirwan, K. Word associates and meaning conditioning. Psychological Reports, 1966, 18, 944-946.

Minke, K.A. and Stalling, R.B. Long-term retention of conditioned attitudes. Technical Report No. 6, University of Hawaii, Office of Naval Research Contract, N 000 14-67-A-0387-0007, April 1970.

Montmollin, G. de, and LeNy,,J.F. Conditionment d'attitude et conditionment verbal. Psychologie Francaise, 1962, 7, 67-74.

Nunnally, J.C., Duchnowski, A.C., and Parker, R.K. Association of neutral objects with rewards: Effect on verbal evaluation and eye movements. Journal of Experimental Child Psychology, 1965, 2, 44-57.

Osipow, S.N. The effects of verbal mediation on the modification of children's attitudes. Journal of Educational Psychology, 1960, 51, 199-207.

Page, M.M. Social psychology of a classical conditioning of attitudes experiment. Journal of Personality and Social Psychology, 1969, 11, 177-186.

Pavio, A. Generalization of verbally conditioned meaning from symbol to referent. Canadian Journal of Psychology, 1964, 18, 146-155.

Pecjak, V. and Smith, S. Influence of induced evaluations and of codability upon the cognitive interaction of colors and forms. In mimeo.

Phelan, J.G. Hekmat, H., & Tang, T. Transfer of verbal conditioning to non-verbal behavior. Psychological Reports, 1967, 20, 979-986.

Pihl, R.O. The reversal of the reinforcement value of a verbal stimulus. Psychological Record, 1966, 16, 529-533.

Pihl, R.O., & Greenspoon, J. The effect of amount of reinforcement on the formation of the reinforcing value of a verbal stimulus. Canadian Journal of Psychology, 1969, 23, 219-226.

Pollio, H.R. Word associations as a function of conditioned meaning. Journal of Experimental Psychology, 1963, 66, 454-460.

Rozelle, R.M. Meaning established by classical conditioning. Psychological Reports, 1968, 22, 889-895.

Schutz, R.E. & Nasmoff, H. An application of Mowrer's sentence conditioning paradigms in developing evaluative meaning. Journal of Verbal Learning and Verbal Behavior, 1964, 1, 459-462.

Staats, A.W. Verbal habit-families, concepts, and the operant conditioning of word classes. Psychological Review, 1961, 68, 190-204.

Staats, A.W. (with contributions by C.K. Staats) Complex Human Behavior. New York: Holt, Rinehart, and Winston, 1963.

Staats, A.W. (Ed.) Human learning. New York: Holt, Rinehart, and Winston, 1964a.

Staats, A.W. Conditioned stimuli, conditioned reinforcers, and word meaning. In A.W. Staats (Ed.), Human learning. New York: Holt, Rinehart, and Winston, 1964, Pp. 205-213. (b)

Staats, A.W. Attitude learning and human motivation. In A.W. Staats (Ed.), Human learning. New York: Holt, Rinehart, and Winston, 1964, Pp. 291-295. (c)

Staats, A.W. Social interaction, attitude function, group cohesiveness, and social power. In A.W. Staats (Ed.), Human learning. New York: Holt, Rinehart, and Winston, 1964, Pp. 329-336. (d)

Staats, A.W. Emotions and images in language: A learning analysis of their acquisition and function. In K. Salzinger & S. Salzinger (Eds.), Research in verbal behavior and some neurophysiological implications. New York: Academic Press, 1967, Pp. 123-145. (a)

Staats, A.W. Outline of an integrated learning theory of attitude formation and function. In M. Fishbein (Ed.), Readings in attitude theory and measurement. New York: Wiley, 1967, Pp. 373-376. (b)

Staats, A.W. Learning, language, and cognition. New York: Holt, Rinehart, and Winston, 1968. (a)

Staats, A.W. Social behaviorism and human motivation: Principles of the A-R-D system. In A.G. Greenwald, T.C. Brock, & T.M. Ostrom (Eds.), Psychological foundations of attitudes. New York: Academic Press, 1968, Pp. 33-66. (b)

Staats, A.W. Experimental demand characteristics and the classical conditioning of attitudes. Journal of Personality and Social Psychology, 1969, 11, 187-192.

Staats, A.W. Linguistic-mentalistic theory versus an explanatory S-R learning theory of language development. In D.T. Slobin (Ed.), The ontogenesis of grammar: Facts and theories. New York: Academic Press, in press.

Staats, A.W. & Staats, C.K. Attitudes established by classical conditioning. Journal of Abnormal and Social Psychology, 1958, 57, 37-40.

Staats, A.W. & Staats, C.K. Effect of number of trials on the language conditioning of meaning. Journal of General Psychology, 1959, 61, 211-223. (a)

Staats, A.W. & Staats, C.K. Meaning and m: Correlated but separate. Psychological Review, 1959, 66, 136-144. (b)

Staats, A.W., Staats, C.K. & Biggs, D.A. Meaning of verbal stimuli changed by conditioning. American Journal of Psychology, 1958, 71, 429-431.

Staats, A.W., Staats, C.K. & Crawford, H.L. First order conditioning of meaning and the parallel conditioning of a GSR. Journal of General Psychology, 1962, 67 159-167.

Staats, A.W., Staats, C.K., Finley, J.R. & Heard, W.G. Independent manipulation of meaning and m. Journal of General Psychology, 1963, 69, 253-260.

Staats, A.W., Staats, C.K., Finley, J.R. & Minke, K.A. Meaning established by classical conditioning controlling associates to the UCS. Journal of General Psychology, 1963, 69, 247-252.

Staats, A.W., Staats, C.K. & Heard, W.G. Language conditioning of meaning to meaning using a semantic generalization paradigm. Journal of Experimental Psychology, 1959, 57, 187-192.

Staats, A.W., Staats, C.K. & Heard, W.G. Denotative meaning established by classical conditioning. Journal of Experimental Psychology, 1961, 61, 300-303.

Staats, A.W., Staats, C.K., Heard, W.G. & Nims, L.P. Replication report: Meaning established by classical conditioning. Journal of Experimental Psychology, 1959, 57, 64.

Staats, C.K. & Staats, A.W. Meaning established by classical conditioning. Journal of Experimental Psychology, 1957, 54, 74-80.

Staats, C.K., Staats, A.W. & Heard, W.G. Attitude development and ratio of reinforcement. Sociometry, 1960, 23, 338-350.

Stalling, R.B. Personality similarity and evaluative meaning as conditioners of attraction. Journal of Personality and Social Psychology, 1970, 14, 77-82.

Weiss, R.F., Chalupa, L.M., Gorman, B.S. & Goodman, N.H. Classical conditioning of attitudes as a function of number of persuasion trials and argument (UCS) strength. Psychonomic Science, 1968, 11, 59-60.

Williams, J.E. Connotations of racial concepts and color names. Journal of Personality and Social Psychology, 1966, 3, 531-540.

Yavuz, H.S. & Bousfield, W.A. Recall of connotative meaning. Psychological Reports, 1959, 5, 319-320.

Yelan, D.R. Identification: The acquisition of evaluative connotations. Journal of Personality and Social Psychology, 1969, 12, 328-332.

Zanna, M.P., Kiesler, C.A. & Pilkonis, P.A. Positive and negative attitudinal affect established by classical conditioning. Journal of Personality and Social Psychology, 1970, 14, 321-328.

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Classical Conditioning of Emotional Responses (Meaning, Attitudes, Values, Interests) and Effects on Social Behavior: A Bibliography

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5. AUTHOR(S) *(First name, middle initial, last name)*
Arthur W. Staats and Carl G. Carlson

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13. ABSTRACT In 1955 Staats began experimental development of the hypothesis that emotional responses--or evaluative responses, evaluative meaning, attitudes, values and so on--constitute an important type of response that can be classically conditioned to words. Many stimuli elicit emotional responses and the words that are contiguously paired with those stimuli also come to elicit an emotional response. Moreover, once a word comes to elicit an emotional response the word can serve to condition emotionality to any other stimulus with which it is paired. Following this analysis, Staats formulated a long-term project that included a series of studies to investigate both first-order classical conditioning of emotional responses as well as higher-order conditioning of responses to words. A number of experiments were conducted by Staats and his associates that showed that emotional responses could be conditioned to words and that many words in our language elicit emotional responses that could be conditioned to other stimuli. This line of research has been elaborated by a number of other investigators, and it has been criticized and supported by other studies. Staats has also developed the learning theory involved and extended it to various areas of study. The theory and the various studies constitute a framework within which to consider significant aspects of human behavior. The present bibliography thus lists the various experimental studies and theoretical analyses to April 1970. (Additional extensions into social interaction and attraction have been made by Byrne and Lott and Lott. Studies not involving classical conditioning manipulations have not been included herein, however.)

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interpersonal attraction						
pleasant-unpleasant scale						
reinforcing stimuli						
reinforcing value						
semantic component						
social interaction						
social learning						